

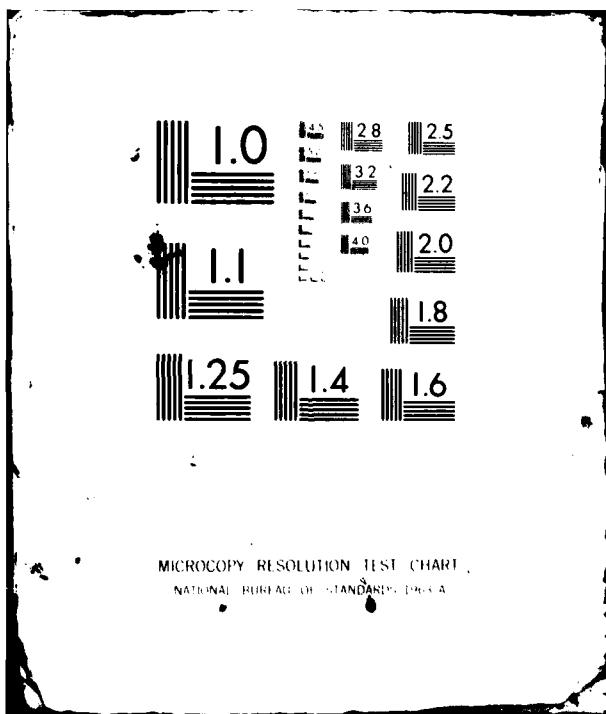
AD-A110 204

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/6 4/2
MISSILE NUMBERS BC-043, BC-042, AND BC-041, ROUND NUMBERS V-191--ETC(U)
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14 December 1981
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AD A110204

METEOROLOGICAL DATA REPORT

Missile Numbers BC-043, BC-042, and BC-041
Round Numbers V-191/MD-45, V-192/MD-46, and V-193/MD-47
14 December 1981

by

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Program Support Coordinator
Phone Number (505) 678-9568
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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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410663

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INTRODUCTION

19313A MLRS, Missile Numbers BC-043, BC-042 and BC-041, Round Numbers V-191/MD-45, V-192/MD-46 and V-193/MD-47, were launched from Tula Gate, White Sands Missile Range (WSMR), New Mexico, at 1613:33, 1613:38 and 1613:42 MST, 14 December 1981. The scheduled launch time were 1600, 1600:04.5 and 1600:09 MST.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations.

a. Surface:

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind speed and direction, and cloud cover were made at the Tula Gate Met Site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

b. Upper Air:

(1) Low level wind data were obtained from pilot-balloon observations at:

SITE AND ALTITUDE

Tula Gate 1550 Meters
MAL 2000 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

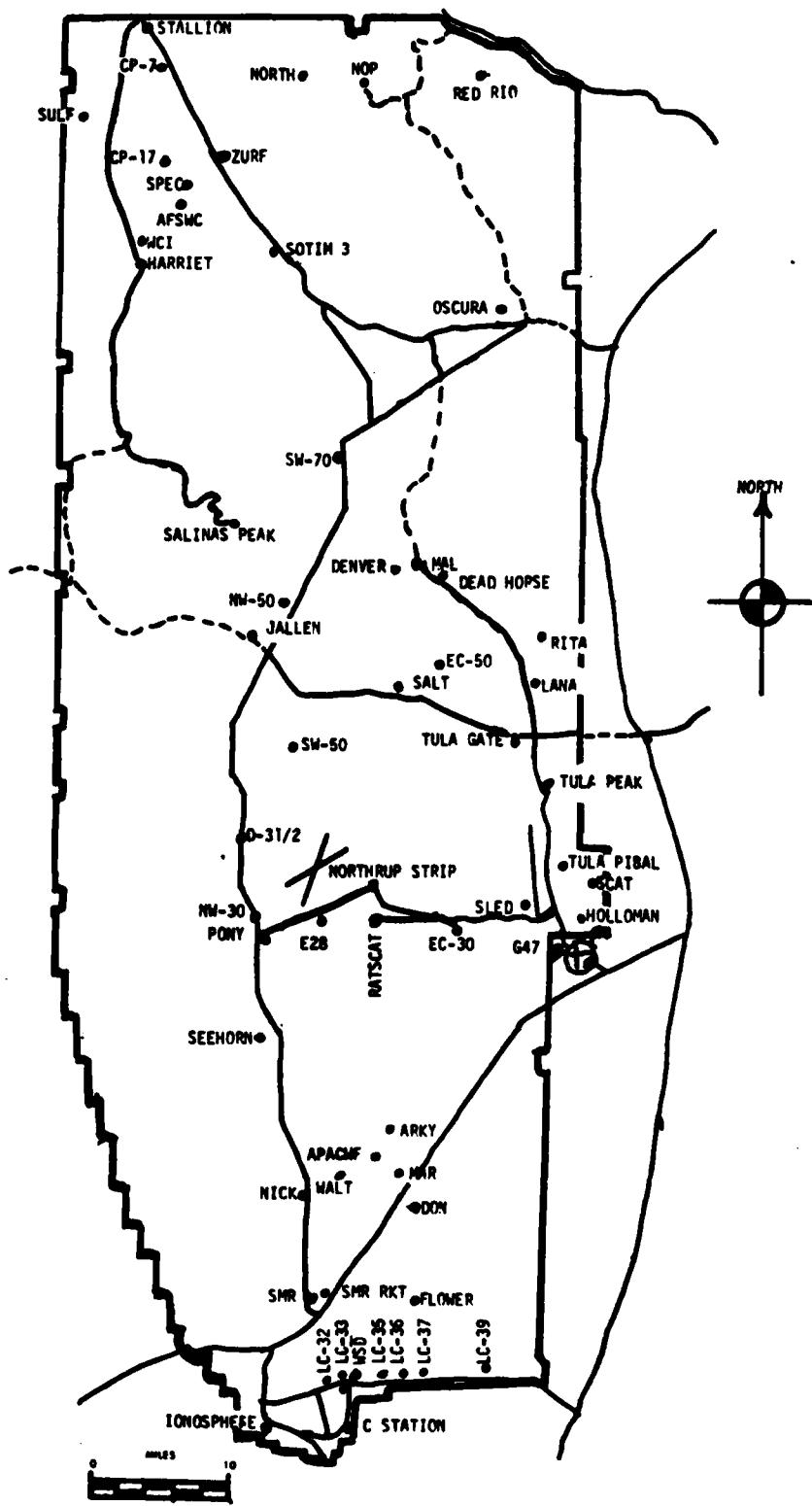
SITE AND TIME

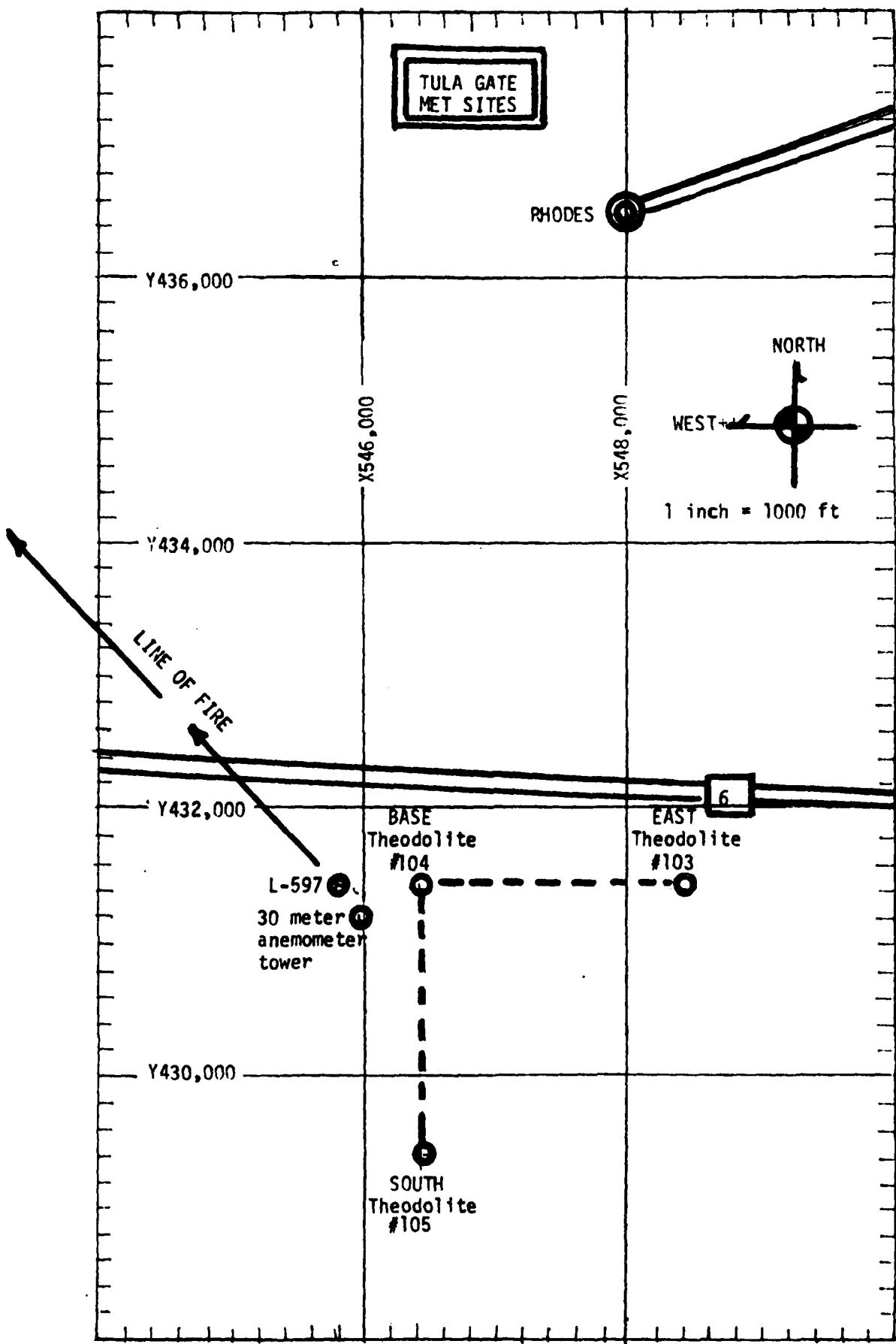
JALLEN	1300 MST
LANA	1430 MST
JALLEN	1500 MST
LANA	1614 MST

Accession For	
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DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification _____	
By _____	
Distribution/ _____	
Availability Codes	
Dist	Avail and/or Special
A	



WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE 1

DATE 14 MONTH	Dec	YEAR 1981							
TIME M S T	PRESSURE mb	TEMPERATURE OF °C	DEW POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m ³	WIND DIRECTION deg Tn	SPEED kts	CHARACTER	VISIBILITY
1610	876.1		10.5	5.0	44	1072	150	02	35

STATION Tula Gate D/I Site

X = 546.402.29 Y = 431.426.23 H = 4.105.86

OBSTRUCTIONS TO VISIBILITY	CLOUDS			REMARKS		
	1st LAYER AMT TYPE HGTT	2nd LAYER AMT TYPE HGTT	3rd LAYER AMT TYPE HGTT			

PSYCHROMETRIC COMPUTATION

TIME:	MST	1610	
DRY BULB TEMP.		10.5	
WET BULB TEMP.		50	
WET BULB DEPR.		5.5	
DEW POINT		-1.2	
RELATIVE HUMID.		44	

TABLE 2T-TIME PILOT-BALLOON MEASURED WIND DATA
DATE 14 December 1981

SITE: Tula Gate

TIME: 1610 MST

WSTM COORDINATES:

X= 547,402.29

Y= 430,426.23

H= 4,101.86

SITE: MAL

TIME: 1610 MST

WSTM COORDINATES:

X= 511,420.45

Y= 495,563.18

H= 4,127.00

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS	LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	150	02	SURFACE	240	01
150	160	03	150	216	03
210	163	03	210	220	03
270	168	02	270	228	03
330	179	01	330	238	02
390	214	01	390	235	02
500	286	02	500	273	01
650	312	05	650	338	04
800	315	10	800	339	06
950	313	13	950	338	06
1150	311	16	1150	322	14
1350	306	15	1350	326	21
1550	306	14	1550	334	23
1750	M I S G		1750	341	28
2000	M I S G		2000	347	33

All data obtained from Double Theodolite tracked pilot-balloon observations.

TABLE 3

AIMING AND T-TIME COMPUTER MET MESSAGES

14 December 1981

JALLEN 1300 MST	LANA 1430 MST	JALLEN 1500 MST	LANA 1614 MST
METCM1332065	METCM1331062	METCM1332065	METCM1331062
141900124883	142050127876	142100124881	142220127876
00000000 28450883	00000000 28410876	00320005 28640881	00000000 28450876
01280003 28280872	01600003 28390866	01304004 28480871	01329004 28420866
02360002 27990846	02315001 28170840	02258003 28210845	02278003 28210840
03544012 27650805	03527003 27760800	03525005 27880804	03562004 27890800
04570017 27380757	04571014 27460752	04543012 27440756	04595020 27650752
05582027 27100711	05599019 27410707	05603023 27150710	05581025 27530707
06586020 26920667	06582020 27230664	06579030 27160667	06605028 27360665
07590026 26760626	07600026 26920624	07599029 26980626	07606026 27120624
08605031 26520588	08599026 26770585	08602025 26720588	08599028 26750586
09603028 26280551	09594028 26440549	09593029 26360551	09596029 26380550
10586033 25980516	10601030 26050514	10584028 25990517	10580030 26010515
11580036 25640483	11584027 25650482	11580030 25630484	11568025 25590482
12553044 25050436	12545035 25140435	12547040 25070437	12545034 25060436

STATION ALTITUDE 4051.00 FEET MSL
14 DEC. 81 1300 HRS MST
ASCENSION NO. 215

SIGNIFICANT LEVEL DATA

GEODETIC COORDINATES
33.16712 LAT DEG
106.49511 LON DEG

TABLE 4

PRESSURE GEOMETRIC MILLIBARS	ALTITUDE MSL FEET	TEMPERATURE DEGREES CENTIGRADE	REL.HUM. PERCENT
882.6	4051.0	11.0	-1.7
875.1	4284.0	9.1	-2.5
849.5	5088.2	6.6	-2.8
836.7	5560.6	4.8	-3.5
772.3	7626.0	0.6	-12.1
754.1	8254.7	.6	-17.1
699.6	10218.5	-3.2	-20.4
673.9	11190.4	-3.8	-21.8
648.1	12200.8	-5.0	-19.8
639.7	12537.9	-4.7	-18.1
597.3	14300.9	-8.0	-17.3
573.1	15356.2	-8.7	-21.7
499.6	18811.6	-15.0	-29.0
440.0	21929.0	-22.0	-35.9
399.5	24235.9	-28.5	-40.3
383.4	25201.3	-30.8	-41.2
343.2	27752.6	-37.6	-42.3

STATION ALTITUDE 4051.00 FEET MSL
 14 DEC. 81 1300 HRS MST
 ASCENSION NO. 215

UPPER AIR DATA
 34R0030215
 JALLEN

TABLE 5

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (IN)	INDEX OF REFRACTION
4051.0	882.6	11.0	-1.7	41.0	1079.6	657.5	.0
4500.0	868.1	8.4	-2.5	45.9	1071.7	654.4	1.000266
5000.0	852.3	6.9	-2.7	50.2	1057.9	652.6	1.000263
5500.0	836.6	5.0	-3.4	54.5	1045.4	650.5	1.000260
6000.0	821.0	3.9	-5.2	51.4	1030.4	649.1	1.000256
6500.0	805.7	2.9	-7.2	47.3	1015.1	647.8	1.000250
7000.0	790.7	1.9	-9.3	43.2	1000.1	646.5	1.000244
7500.0	776.0	.9	-11.5	39.0	985.3	645.3	1.000238
8000.0	761.4	.6	-14.8	30.3	968.0	644.9	1.000232
8500.0	747.1	.1	-17.5	25.0	951.6	644.5	1.000225
9000.0	732.9	-.8	-18.4	25.0	937.0	643.1	1.000220
9500.0	719.1	-1.8	-19.2	25.0	922.5	642.0	1.000216
10000.0	705.5	-2.8	-20.0	25.0	908.4	640.8	1.000212
10500.0	692.1	-3.4	-20.8	24.4	893.1	640.1	1.000209
11000.0	678.9	-3.7	-21.6	23.4	877.1	639.7	1.000205
11500.0	665.9	-4.2	-21.1	25.1	861.9	639.1	1.000201
12000.0	653.1	-4.8	-20.2	28.6	847.2	638.5	1.000198
12500.0	640.6	-4.7	-18.3	33.5	830.8	638.5	1.000195
13000.0	628.3	-5.6	-17.8	37.4	817.2	637.6	1.000193
13500.0	616.2	-6.5	-17.5	41.1	804.3	636.5	1.000190
14000.0	604.3	-7.4	-17.3	44.8	791.5	635.4	1.000187
14500.0	592.7	-8.1	-18.0	44.5	778.3	634.5	1.000185
15000.0	581.2	-8.5	-20.1	38.4	764.3	634.1	1.000181
15500.0	569.8	-9.0	-22.0	33.8	750.9	633.4	1.000177
16000.0	558.6	-9.9	-23.0	33.1	738.7	632.3	1.000173
16500.0	547.6	-10.8	-24.1	32.3	726.7	631.2	1.000170
17000.0	536.9	-11.7	-25.1	31.6	715.0	630.1	1.000167
17500.0	526.3	-12.6	-26.2	30.9	703.4	629.0	1.000165
18000.0	516.0	-13.5	-27.3	30.2	692.0	627.9	1.000164
18500.0	505.8	-14.4	-28.3	29.5	680.8	626.8	1.000161
19000.0	495.8	-15.4	-29.4	28.9	669.9	625.6	1.000159
19500.0	485.8	-16.5	-30.5	28.6	659.3	624.2	1.000155
20000.0	476.0	-17.7	-31.6	28.2	648.8	622.8	1.000152
20500.0	466.4	-18.8	-32.7	27.9	638.6	621.4	1.000149
21000.0	457.0	-19.9	-33.8	27.6	628.5	620.0	1.000146
21500.0	447.8	-21.0	-34.9	27.3	618.5	618.7	1.000142
22000.0	438.7	-22.2	-36.0	27.1	608.8	617.2	1.000140
22500.0	429.6	-23.6	-36.9	28.0	599.6	615.5	1.000137
23000.0	420.7	-25.0	-37.9	28.9	590.5	613.7	1.000135
23500.0	412.0	-26.4	-38.8	29.7	581.6	612.0	1.000131

STATION ALTITUDE 4051.00 FEET MSL
 1st DEC. 81 1300 HRS MST
 ASCENSION NO. 215

UPPER AIR DATA
 348030215
 JALLIN

GEODETIC COORDINATES
 33.16712 LAT DEG
 106.49511 LON DEG

TABLE 5 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	DEWPOINT PERCENT	REL.HUM. 6M/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (INI)	INDEX OF REFRACTION
24000.0	403.5	-27.8	-39.8	30.6	572.8	610.2	50.2
24500.0	395.0	-29.1	-40.5	32.1	563.9	608.6	50.3
25000.0	386.7	-30.3	-41.0	34.2	554.7	607.1	53.0
25500.0	378.5	-31.6	-41.1	36.0	545.7	605.5	53.0
26000.0	370.3	-32.9	-41.2	43.1	537.0	603.9	54.1
26500.0	362.4	-34.3	-41.3	48.2	528.4	602.2	54.1
27000.0	354.6	-35.6	-41.6	53.3	519.9	600.5	54.1
27500.0	347.0	-36.9	-42.1	58.4	511.6	598.6	54.1

STATION ALTITUDE 4051.00 FEET MSL
14 DEC. 81
ASCENSION NO. 215

MANDATORY LEVELS
3480030215
JALLEN
TABLE 6

GEODETIC COORDINATES
33.16712 LAT DEG
106.49511 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE			REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS
		AIR DEGREES	DAMPPOINT CENTIGRADE	WIND 4.1			
850.0	5069.	6.6	-2.8	51.	301.6	305.8	12.8
800.0	6688.	2.5	-8.0	46.	324.1	327.7	10.7
750.0	8391.	.3	-17.4	25.	327.7	24.7	
700.0	10194.	-3.2	-20.4	25.	327.7	23.4	
650.0	12113.	-4.9	-20.0	29.	327.7	30.4	
600.0	14170.	-7.6	-17.3	46.	337.7	28.3	
550.0	16381.	-10.6	-23.9	33.	337.8	34.5	
500.0	18767.	-15.0	-28.9	29.	328.1	42.6	
450.0	21353.	-20.8	-34.6	27.	312.9	50.6	
400.0	24168.	-28.4	-40.2	31.	310.0		
350.0	27259.	-36.4	-41.9	56.			

STATION ALTITUDE 4173.44 FEET MSL
 14 DEC. E1
 1430 HRS MST
 ASCENSION NO. 5

SIGNIFICANT LEVEL DATA
 3480320005
 LANA

TABLE 7

EQUATORIAL COORDINATES
 33°13'51.0 LAT DEG
 106°15'44.6 LONG DEG

PRESSURE GEOMETRIC MILLIBARS	ALTITUDE MSL FEET	TEMPERATURE		REL.HUM. PERCENT
		AIR DEGREES	DEMPPOINT CENTIGRADE	
876.4	4173.4	10.1	.7	52.0
865.4	4518.6	10.3	.1	49.0
850.0	5008.1	6.8	-1.0	50.0
786.8	7083.9	2.2	-4.5	61.0
783.9	7182.1	2.9	-6.5	50.0
749.0	8388.1	.4	-10.7	43.0
707.6	9888.6	1.1	-12.6	35.0
700.0	10173.6	.3	-12.7	37.0
673.6	11185.5	-.3	-11.9	41.0
637.6	12621.5	-.5	-12.1	51.0
602.1	14104.5	-.6	-17.3	39.0
584.6	14865.5	-.5	-15.3	45.0
500.0	18831.7	-.5	-25.6	38.0
467.5	20494.0	-.5	-29.0	39.0
436.7	22157.5	-.3	-32.1	37.0
400.0	24264.2	-.2	-35.3	45.0
363.9	26482.1	-.6	-39.1	53.0
350.1	27377.8	-.9	-42.1	39.0
300.0	30883.0	-.6	-42.6	
273.4	32925.3	-.5	-47.5	
255.4	34396.7	-.7	-50.8	

STATION ALTITUDE 4173.44 FEET MSL
19 DEC. 81 1430 HRS MST
ASCENSION NO. 5

UPPER AIR DATA
3480320005
LANA

TABLE 8

GEOGRAPHIC COORDINATES
33.13510 LAT DEG
106.15446 LON UEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
4173.4	876.4	10.1	-7	52.0	1074.9	656.6	0	1.000270
4500.0	866.0	10.3	-1	49.2	1061.5	656.8	181.4	1.000266
5000.0	850.3	8.8	-1.0	50.0	1047.8	655.0	181.4	1.000260
5500.0	834.6	7.2	-1.8	52.6	1034.4	653.1	181.4	1.000256
6000.0	819.2	5.6	-2.6	55.3	1021.2	651.2	259.4	1.000252
6500.0	804.1	4.1	-3.5	57.9	1008.2	649.4	304.9	1.000248
7000.0	789.3	2.5	-4.4	60.6	995.5	647.5	35.3	1.000244
7500.0	774.5	2.2	-7.6	48.2	978.1	647.0	33.0	1.000235
8000.0	760.1	1.2	-9.3	45.3	963.6	645.8	314.7	1.000230
8500.0	745.0	.5	-10.8	42.4	948.3	644.8	310.3	1.000225
9000.0	731.8	.7	-11.4	39.7	929.6	645.1	318.4	1.000220
9500.0	716.1	.9	-12.1	37.1	911.6	645.4	336.2	1.000215
10000.0	704.6	.8	-12.6	35.8	895.0	645.2	335.6	1.000211
10500.0	691.4	.1	-12.4	38.3	880.3	644.4	332.1	1.000208
11000.0	678.4	-.2	-12.0	40.3	864.6	644.1	329.7	1.000205
11500.0	665.5	-.1	-11.9	43.2	850.7	643.1	329.1	1.000202
12000.0	652.9	-.2	-12.0	46.7	838.0	641.8	332.1	1.000199
12500.0	640.6	-.3	-12.1	50.2	825.6	640.5	334.4	1.000196
13000.0	628.3	-.4	-13.4	47.9	812.3	639.5	336.1	1.000192
13500.0	616.3	-.7	-15.1	43.9	799.0	638.6	337.0	1.000188
14000.0	604.5	-.5	-16.9	39.8	785.9	637.7	337.7	1.000184
14500.0	592.9	-.5	-16.3	42.1	770.8	637.8	338.3	1.000181
15000.0	581.5	-.6	-15.7	44.8	756.3	637.6	338.0	1.000178
15500.0	570.2	-.6	-17.0	43.9	744.9	636.2	338.1	1.000175
16000.0	559.0	-.7	-16.3	45.0	733.6	634.8	337.0	1.000171
16500.0	548.1	-.9	-19.6	42.1	722.5	633.3	337.0	1.000168
17000.0	537.4	-.10	-20.9	41.2	711.6	631.9	336.3	1.000165
17500.0	526.9	-.11	-22.2	40.4	700.8	630.5	335.5	1.000162
18000.0	516.7	-.12	-23.5	39.5	690.3	629.1	334.3	1.000159
18500.0	506.6	-.13	-24.8	38.6	679.9	627.7	332.6	1.000156
19000.0	496.6	-.14	-26.0	36.1	669.5	626.2	331.4	1.000153
19500.0	486.7	-.16	-27.0	36.4	659.2	624.8	330.0	1.000151
20000.0	476.9	-.17	-28.0	36.7	649.1	623.3	326.3	1.000148
20500.0	467.4	-.18	-29.0	39.0	639.1	621.8	321.6	1.000146
21000.0	457.9	-.19	-29.9	36.4	628.3	620.8	315.0	1.000143
21500.0	448.6	-.20	-30.8	37.6	617.6	619.7	309.2	1.000140
22000.0	439.5	-.21	-31.8	37.2	607.1	618.7	304.2	1.000138
22500.0	430.2	-.22	-32.5	38.3	597.5	617.2	302.4	1.000135
23000.0	421.6	-.23	-33.3	40.2	588.4	615.5	301.1	1.000133
23500.0	412.9	-.24	-34.0	42.1	579.4	613.9	299.9	1.000131

STATION ALTITUDE 4173.44 FEET MSL
14 UEC. 81 1430 HRS MST
ASCENSION NO. 5

UPPER AIR DATA
3480320005
LANA

TABLE 8 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (DEGREES (IN))	INDEX OF REFRACTION
24000.0	404.4	-26.3	-34.8	44.0	570.5	612.2	299.2
24500.0	396.0	-27.6	-35.7	45.9	561.7	610.5	299.4
25000.0	387.6	-28.9	-36.5	47.7	552.6	608.9	301.3
25500.0	379.5	-30.2	-37.3	49.5	544.1	607.3	305.1
26000.0	371.5	-31.5	-38.2	51.3	535.5	605.6	308.3
26500.0	363.6	-32.8	-39.1	52.7	526.9	604.0	310.5
27000.0	355.9	-32.9	-40.7	44.9	515.8	604.0	312.1
27500.0	348.2	-33.2	-42.7	37.6**	505.6	603.5	312.5
28000.0	340.6	-34.6	-45.4	32.1**	497.4	601.7	312.9
28500.0	333.2	-36.0	-48.5	26.5**	489.4	600.0	313.1
29000.0	326.0	-37.4	-51.6	21.0**	481.6	598.2	313.5
29500.0	318.8	-38.8	-55.3	15.4**	473.9	596.4	314.1
30000.0	311.9	-40.2	-60.0	9.8**	466.3	594.7	314.6
30500.0	305.1	-41.5	-67.2	4.3**	458.9	592.9	315.0
31000.0	298.4	-42.9			451.4	591.2	315.0
31500.0	291.7	-44.1			443.6	589.6	314.6
32000.0	285.1	-45.3			435.9	588.1	315.7
32500.0	278.7	-46.5			428.4	586.5	316.6
33000.0	272.5	-47.7			420.9	585.0	318.3
33500.0	266.2	-48.8			413.4	583.5	321.1
34000.0	260.1	-49.9			405.9	582.1	319.9

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4173.44 FEET MSL
10 UEC. A1 1430 HRS MST
ASCENSION NO. 5

MANDATORY LEVELS
3480320000,
LANA
TABLE 9

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES CENTIGRADE	AIR DEWPONT CENTIGRADE	R.H. PERCENT	WIND DATA DIR ECTN , KNOTS
850.0	5005.	8.6	-1.0	50.	181.4 .4
800.0	6636.	3.6	-3.7	59.	336.5 2.5
750.0	8346.	.5	-10.6	43.	311.4 15.5
700.0	10164.	.3	-12.7	37.	334.4 19.5
650.0	12108.	-2.4	-12.0	47.	332.8 22.6
600.0	14179.	-5.6	-17.1	40.	337.8 25.8
550.0	16410.	-8.9	-19.4	42.	337.1 26.0
500.0	18807.	-14.5	-25.6	38.	331.8 28.0
450.0	21396.	-20.1	-30.7	38.	310.1 32.1
400.0	24226.	-27.0	-35.3	45.	299.3 36.3
350.0	27337.	-32.9	-42.1	39.**	312.4 40.0
300.0	30824.	-42.6		315.1	54.2

* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEOGRAPHIC COORDINATES
33.13510 LAT DEG
106.15446 LON DEG

STATION ALTITUDE 4051.00 FEET MSL
14 DEC. 81 1500 HRS MST
ASCENSION NO. 216

SIGNIFICANT LEVEL DATA
3480030216
JALLEN
TABLE 10

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE FEET	TEMPERATURE DEGREES CENTIGRADE	AIR DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
681.0	4051.0	12.7	2.3	49.0
679.0	4113.6	11.7	*.8	47.0
649.8	5036.5	8.6	-2.1	47.0
613.9	6203.4	6.0	-5.6	43.0
753.7	8250.0	.5	-11.2	41.0
699.2	10216.6	-2.8	-17.5	31.0
693.5	10429.9	-2.3	-17.9	29.0
667.1	11444.3	-1.4	-12.9	41.0
593.4	14485.9	-5.7	-17.7	38.0
499.5	18846.9	-15.2	-25.7	40.0
432.9	22350.5	-23.0	-33.9	36.0
399.5	24268.6	-27.6	-34.8	50.0
387.7	24975.8	-29.3	-35.6	53.0
373.1	25876.8	-30.0	-39.9	37.0
331.5	28612.1	-36.3	-43.9	45.0

STATION ALTITUDE 4051.00 FEET MSL
10 DEC. 61 1500 HRS MST
ASCENSION NO. 216

UPPER AIR DATA
3480030216
JALLEN
TABLE 11

GEODETIC COORDINATES
33.16712 LAT DEG
106.49511 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(1N)	INDEX OF REFRACTION
4051.0	891.0	12.7	2.3	49.0	1070.4	659.7	180.0
4500.0	866.7	10.4	7.4	47.0	1062.0	656.9	164.2
5000.0	850.9	8.7	-1.9	47.0	1049.2	654.8	194.0
5500.0	835.4	7.6	-3.5	45.4	1034.4	653.4	223.2
6000.0	820.0	6.5	-5.0	43.7	1019.7	652.1	283.0
6500.0	804.9	5.2	-6.4	42.7	1005.5	650.5	294.6
7000.0	789.9	3.9	-7.8	42.2	991.8	648.9	299.6
7500.0	775.2	2.5	-9.2	41.7	978.2	647.3	302.7
8000.0	760.8	1.2	-10.5	41.2	964.8	645.7	306.1
8500.0	746.5	.1	-12.0	39.7	950.7	644.4	315.0
9000.0	732.4	-6	-13.5	37.2	935.7	643.3	326.1
9500.0	718.6	-1.6	-15.1	34.6	920.9	642.3	334.4
10000.0	705.0	-2.4	-16.8	32.1	906.4	641.3	337.7
10500.0	691.6	-2.2	-17.5	29.8	883.6	641.5	333.6
11000.0	678.5	-1.8	-14.9	35.7	870.2	642.1	330.4
11500.0	665.7	-1.5	-13.0	40.9	852.5	642.5	327.2
12000.0	653.0	-2.2	-13.8	40.5	838.5	641.7	329.1
12500.0	640.5	-2.9	-14.6	40.0	824.7	640.8	332.6
13000.0	628.3	-3.6	-15.4	39.5	811.1	640.0	335.9
13500.0	616.4	-4.3	-16.2	39.0	797.8	639.1	339.4
14000.0	604.6	-5.0	-16.9	38.5	784.7	638.3	339.0
14500.0	593.1	-5.7	-17.7	38.0	771.8	637.4	338.6
15000.0	581.5	-6.8	-18.6	38.2	759.9	636.1	337.2
15500.0	570.1	-7.9	-19.6	38.5	748.1	634.7	335.7
16000.0	559.0	-9.0	-20.5	38.7	736.6	633.4	334.1
16500.0	548.0	-10.1	-21.4	36.9	725.2	632.1	332.4
17000.0	537.3	-11.2	-22.3	39.2	714.0	630.8	331.3
17500.0	526.8	-12.3	-23.2	39.4	703.0	629.5	330.5
18000.0	516.5	-13.4	-24.1	39.6	692.1	628.1	329.6
18500.0	506.4	-14.4	-25.1	39.8	681.5	626.8	329.3
19000.0	496.4	-15.5	-26.1	39.8	670.9	625.5	327.2
19500.0	486.4	-16.7	-27.2	39.3	660.2	624.1	324.5
20000.0	476.5	-17.8	-28.4	38.7	649.7	622.7	322.1
20500.0	466.9	-18.9	-29.6	38.1	639.4	621.3	319.9
21000.0	457.4	-20.0	-30.7	37.5	629.2	620.0	316.6
21500.0	448.2	-21.1	-31.9	37.0	619.3	618.6	313.1
22000.0	439.1	-22.2	-33.1	36.4	609.5	617.2	308.6
22500.0	430.2	-23.4	-33.9	37.1	599.8	615.6	304.4
23000.0	421.3	-24.6	-34.0	40.7	590.2	614.3	302.9
23500.0	412.6	-25.8	-34.3	44.4	580.8	612.9	302.4

STATION ALTITUDE 4051.00 FEET MSL
 16 DEC. 61 1500 HRS MST
 ASCENSION NO. 216

UPPER AIR DATA
 3480630214
 JALLET

TABLE 11 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEPOINT DEGREES CENTIGRADE	EL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
24000.0	404.0	-27.0	-34.6	48.0	571.5	611.4	302.6
24500.0	395.6	-28.2	-35.1	51.0	562.4	609.9	305.6
25000.0	387.3	-29.3	-35.9	52.6	553.2	608.4	310.0
25500.0	379.1	-29.7	-38.1	43.7	542.4	607.9	315.1
26000.0	371.1	-30.3	-40.1	37.4	532.2	607.2	318.2
26500.0	363.2	-31.4	-40.8	38.8	523.3	605.7	320.4
27000.0	355.4	-32.6	-41.5	40.3	514.6	604.3	322.0
27500.0	347.8	-33.7	-42.2	41.7	506.0	602.6	324.3
28000.0	340.4	-34.9	-42.9	43.2	497.6	601.4	326.0
28500.0	333.1	-36.0	-43.7	44.7	489.3	599.9	327.7

GEODETIC COORDINATES
 33.16712 LAT DEG
 106.49511 LON DEG

STATION ALTITUDE 4051.00 FEET MSL
14 DEC. 61 1500 HRS MST
ASCENSION NO. 216

MANDATORY LEVELS

3480030210

JALLEN

TABLE 12

GEODETIC COORDINATES
33.16712 LAT DEG
106.49511 LON UEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	AIR DEGREES	TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT		WIND DATA DIRECTION (TN) DEGREES (TN)	SPEED KNOTS
				DEWPNT	MNH.		
850.0	5027.	8.6	-2.0	47.	194.9	2.4	
800.0	6661.	4.8	-6.9	43.	296.4	5.9	
750.0	8373.	.3	-11.6	40.	311.6	12.7	
700.0	10177.	-2.7	-17.4	31.	336.2	25.9	
650.0	12111.	-2.4	-14.0	40.	329.9	29.6	
600.0	14185.	-5.3	-17.3	38.	338.8	26.7	
550.0	16408.	-9.9	-21.2	39.	332.7	27.9	
500.0	18797.	-15.1	-25.7	40.	328.2	28.3	
450.0	21381.	-20.9	-31.7	37.	315.8	35.8	
400.0	24200.	-27.5	-34.8	50.	304.0	49.6	
350.0	27317.	-33.4	-42.0	41.			

STATION ALTITUDE 4173.44 FEET MSL
1614 HRS PST
14 DEC. 81
ASCENSION NO. 6

SIGNIFICANT LEVEL DATA
3480320000
LANA
TABLE 13

GEOGRAPHIC COORDINATES
33.13510 LAT DEG
106.15446 LONG DEG

PRESSURE MILLIBARS MSL	GEOMETRIC ALTITUDE FEET	TEMPERATURE AIR DEPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
875.9	4173.4	10.5	-1.2
871.1	4323.0	11.0	-1.7
856.0	4993.4	9.2	-2.1
823.7	5845.4	6.8	-3.1
784.1	7168.4	4.1	-6.5
731.5	9016.6	2.1	-12.0
700.0	10183.2	1.7	-9.8
652.3	12861.5	-1.6	-14.7
500.0	18854.8	-14.9	-23.9
460.1	20901.9	-20.6	-27.0
443.7	21784.1	-21.3	-32.6
423.4	22914.8	-24.0	-33.2
400.0	24222.7	-26.7	-36.4
365.1	26423.0	-30.9	-42.4
346.8	27617.5	-33.5	-44.4
308.5	30283.6	-40.2	
300.0	30909.3	-41.6	
256.3	34360.4	-50.1	

STATION ALTITUDE 4173.44 FEET MSL
14 DEC. 61 1614 HRS MST
ASCENSION NO. 6

UPPER AIR DATA
3480320000
LANA

TABLE 14

GEODDITIC COORDINATES
33°15'51" LAT DEG
106°15'44" LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	AIR UEMPOINT CENTIGRADE	EL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (IN) KNOT(S)	INDEX OF REFRACTION
4173.4	873.9	10.5	-1.2	44.0	1073.1	650.9	0.0	1.000265
4500.0	865.5	10.5	-1.8	42.1	1060.4	656.9	210.9	1.000261
5000.0	849.8	9.2	-2.1	45.0	1046.1	655.4	210.9	.7
5500.0	834.3	7.8	-2.7	47.4	1032.2	653.7	210.9	1.2
6000.0	819.0	6.5	-3.7	47.9	1018.1	652.2	210.9	1.6
6500.0	803.9	5.5	-5.6	44.5	1003.2	650.9	297.3	1.000249
7000.0	789.0	4.4	-7.6	41.1	983.6	649.6	318.0	1.000243
7500.0	774.4	3.7	-9.1	38.6	972.8	648.7	330.6	1.000237
8000.0	760.0	3.2	-10.3	36.4	956.7	648.1	334.1	1.000232
8500.0	745.8	2.7	-11.5	34.2	940.3	647.4	334.5	1.000227
9000.0	732.0	2.1	-12.8	32.1	925.2	646.7	335.7	1.000222
9500.0	718.3	1.9	-11.5	36.1	908.4	646.6	331.1	1.000218
10000.0	704.9	1.8	-10.2	40.4	891.8	646.4	330.2	1.000215
10500.0	691.6	1.3	-10.4	41.3	876.5	645.9	332.3	1.000213
11000.0	678.6	.7	-11.3	40.2	862.1	645.1	334.4	1.000209
11500.0	665.9	.1	-12.2	39.1	847.8	644.4	337.5	1.000201
12000.0	653.3	-.5	-13.1	37.9	833.6	643.6	340.2	1.000197
12500.0	641.0	-.2	-14.0	36.8	820.0	642.9	340.5	1.000193
13000.0	628.9	-1.9	-14.9	36.2	806.8	642.0	340.9	1.000190
13500.0	616.7	-3.0	-15.6	37.1	794.4	640.7	340.9	1.000186
14000.0	604.7	-4.1	-16.3	37.9	782.2	639.3	340.1	1.000183
14500.0	593.0	-5.2	-17.1	36.7	770.3	638.0	338.1	1.000180
15000.0	581.5	-6.3	-17.8	39.6	758.5	636.7	337.0	1.000177
15500.0	570.2	-7.5	-18.6	40.4	746.9	635.3	337.0	1.000174
16000.0	559.2	-8.6	-19.3	41.2	735.6	634.0	336.3	1.000171
16500.0	548.3	-9.7	-20.1	42.1	724.4	632.6	335.0	1.000168
17000.0	537.7	-10.8	-20.9	42.9	713.3	631.3	332.2	1.000165
17500.0	527.2	-11.9	-21.7	43.7	702.5	629.9	328.3	1.000162
18000.0	517.0	-13.0	-22.5	44.6	691.8	628.6	325.9	1.000160
18500.0	507.0	-14.1	-23.3	45.4	681.4	627.2	324.2	1.000157
19000.0	497.1	-15.3	-24.1	46.7	671.1	625.8	323.3	1.000154
19500.0	487.1	-16.7	-24.8	49.2	661.2	624.1	321.7	1.000152
20000.0	477.3	-18.1	-25.6	51.6	651.5	622.4	319.5	1.000150
20500.0	467.7	-19.5	-26.4	54.0	641.9	620.7	315.8	1.000147
21000.0	458.2	-20.7	-27.6	53.7	632.0	619.2	312.2	1.000145
21500.0	448.9	-21.1	-30.6	41.8	620.2	618.7	309.1	1.000141
22000.0	439.8	-21.8	-32.7	36.3	609.3	617.7	306.4	1.000138
22500.0	430.7	-23.0	-33.0	39.4	599.7	616.3	307.2	1.000136
23000.0	421.9	-24.2	-33.4	41.8	590.1	614.8	305.5	1.000134
23500.0	413.2	-25.2	-34.6	40.7	580.2	613.6	303.5	1.000131

STATION ALTITUDE 4173.44 FEET MSL
 14 DEC. 81 1614 IRS 1ST
 ASCENSION NO. 6

UPPER AIR DATA
 348032000L
 LANA
 TABLE 14 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METERS	SPEED OF SOUND KNOTS	WIND DATA DIRECTION IN DEGREES (IN)	INDEX OF REFRACTION
24000.0	404.6	-26.2	-35.8	39.6	570.5	612.3	.505.3
24500.0	396.2	-27.1	-37.0	38.2	560.9	611.1	.308.9
25000.0	387.8	-28.1	-38.4	36.3	551.3	609.9	.312.4
25500.0	379.7	-29.1	-39.8	34.4	541.9	608.7	.315.9
26000.0	371.7	-30.1	-41.2	32.6	532.6	607.4	.319.8
26500.0	363.9	-31.1	-42.5	31.1	523.6	606.2	.324.7
27000.0	356.1	-32.2	-43.4	31.5	514.7	604.8	.327.3
27500.0	348.6	-33.2	-44.2	31.9	505.1	603.5	.328.8
28000.0	341.0	-34.5	-46.7	27.4**	497.7	601.9	.329.4
28500.0	333.6	-35.7	-49.9	21.4**	489.5	600.3	.329.4
29000.0	326.4	-37.0	-53.8	15.4**	481.4	598.7	.328.6
29500.0	319.3	-38.2	-58.7	9.4**	473.5	597.1	.327.7
30000.0	312.4	-39.5	-67.2	3.4**	465.7	595.5	.326.7
30500.0	305.5	-40.7			457.9	594.0	.326.1
31000.0	298.8	-41.8			449.9	592.5	.325.6
31500.0	292.0	-43.1			442.1	590.9	.325.3
32000.0	285.4	-44.3			434.5	589.4	.324.8
32500.0	279.0	-45.5			427.0	587.8	.324.4
33000.0	272.7	-46.7			419.6	586.2	.323.9
33500.0	266.6	-48.0			412.4	584.6	.323.5
34000.0	260.5	-49.2			405.3	583.0	.323.2

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4173.44 FEET MSL
 14 DEC. 81 1614 HRS MST
 ASCENSION NO. 6

MANDATORY LEVELS
 3480320000
 LANA
 TABLE 15

GEOGRAPHIC COORDINATES
 33°35'10" LAT DEG
 106°15'44" LONG DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE			REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS
		AIR DEGREES	DEWPNT CENTIGRADE	CENTIGRADE			
850.0	4990.	9.2	-2.1	45.	210.9	.7	
800.0	6626.	5.2	-6.1	44.	306.5	5.4	
750.0	8346.	2.8	-11.1	35.	334.4	19.9	
700.0	10174.	1.7	-9.8	42.	331.2	25.9	
650.0	12125.	-7	-15.3	38.	340.3	27.9	
600.0	14210.	-4.6	-16.6	38.	339.2	26.0	
550.0	16438.	-9.5	-20.0	42.	335.1	28.9	
500.0	18830.	-14.9	-25.9	46.	323.6	28.1	
450.0	21410.	-21.0	-30.2	43.	309.5	28.9	
400.0	24234.	-26.7	-36.4	39.	307.2	39.4	
350.0	27357.	-33.0	-44.1	32.	328.7	54.2	
300.0	30850.	-41.6			325.7	67.0	